STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

2021 Washington State Energy Code Development

Energy Code Proposal Short Form

For editorial **Coordination, Clarifications & Corrections** only,
without substantive energy or cost impacts Log No. 150

Code being amended: ☒ Commercial Provisions ☐ Residential Provisions
(A MS Word version of the code is linked to the name)

Code Section # **C202, Table C402.1.3, Table C402.1.4**

Brief Description:

The mass transfer deck slab edge requirement in C402.1.3 and C402.1.4 is a confusing detail in the code. A mass transfer slab is a structural element. It is not the intent of the WSEC to require this slab to be thermally broken at the building perimeter wall. However, this element does contribute to thermal heat loss so the code requires that it be accounted for in the overall envelope thermal performance calculation.

This proposal incorporates clarifying language from the 2018 Seattle Energy Code for this opaque envelope element. It also clarifies that a cantilevered concrete balcony is not equivalent to a mass transfer deck slab.

This proposal also corrects a minor typo in Table C402.1.3 where "R-" is missing from a few of the values in this table.

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

~~**MASS TRANSFER DECK SLAB EDGE.** That portion of the *above-grade wall* made up of the concrete slab where it extends past the footprint of the floor above. A concrete slab designed to transfer structural load from the building perimeter wall or column line above, laterally to an offset wall or column line below, and which has conditioned or semi-heated space on the inside of the upper wall and exterior or unconditioned space on the outside of the upper wall. The area of the slab edge shall be defined as the thickness of the slab multiplied by the perimeter length of the edge condition. Examples of this condition include, but are not limited to, the transition from an above-grade structure to a below-grade structure or the transition from a tower to a podium. A cantilevered concrete balcony does not constitute a mass transfer deck slab.~~

MASS TRANSFER DECK SLAB EDGE. That portion of the above-grade wall made up of the concrete slab, where ~~it extends past the footprint of the floor above, and~~ there is ~~space (~~conditioned or unconditioned~~)~~ space below the slab. ~~The area of the slab edge shall be defined as the thickness of the slab multiplied by the perimeter of the edge condition. Examples of this condition include, but are not limited to, the transition from an above-grade structure to a below-grade structure or the transition from a tower to a podium. Cantilevered balconies do not meet this definition.~~

Examples of the condition are below.

- The transition from a Type IA structure to a Type VA structure
- The transition from a Type IA podium structure to a Type 1A tower

Transfer deck slab thicknesses typically are 12 inches or thicker.

Intermediate transfer deck conditions can exist.

A mass transfer deck slab edge may or may not be insulated. UA calculations will be required if the mass transfer deck has any non-insulated square footage.

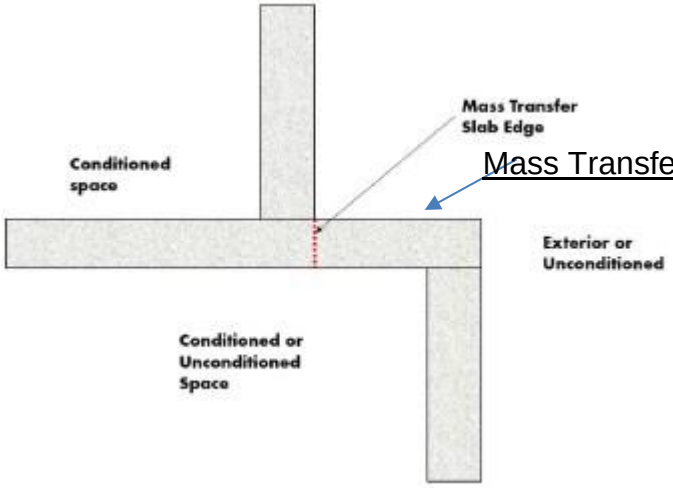

TABLE C402.1.3
OPAQUE THERMAL ENVELOPE INSULATION COMPONENT MINIMUM REQUIREMENTS, R-VALUE METHOD [a,i]

Walls, Above Grade		
Mass [h]	R-9.5 [c] ci	R-13.3ci
Mass transfer deck slab edge	~~R-5~~ NR	~~R-5~~ NR
Metal building	R-13 + R-14ci	R-13 + R-14ci
Steel framed	R-13 + R-10ci	R-19 + R-8.5ci
Wood framed and other	R-13 + R-7.5ci std or R-20 + R-3.8ci std	R-13 + R-7.5ci std or R-20 + R-3.8ci std or R-25 std

TABLE C402.1.4
OPAQUE THERMAL ENVELOPE ASSEMBLY MAXIMUM REQUIREMENT, U-FACTOR METHOD [a,f]

Walls, Above Grade		
Mass [g]	U-0.104 [d]	U-0.078
Mass transfer deck slab edge [j] ***[NOTE – Add Footnote "j"]***	U-0.20	U-0.20
Metal building	U-0.050	U-0.050
Steel framed	U-0.055	U-0.055
Wood framed and other	U-0.051	U-0.051

Footnote j – A mass transfer deck, due to its configuration, is not insulated. The table value (U-0.20) shall be used as the baseline value for component performance or total building performance path calculations. For the proposed value, the appropriate value from Table A104.3.7.2 shall be used.

Purpose of code change:

Address an ambiguous detail in the code regarding mass transfer deck slab edge that has caused confusion for jurisdictions and concern for structural engineers.

Correct minor typos in the R-value requirements for "Wood-framed and other walls" that have created confusion about code intent.

These changes are not intended to alter existing code stringency.

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